CLAIMS

1. A method for reducing the crest factor of a multi-carrier signal, the method comprising:

(a) evaluating an inverse Fourier transform of the multi-carrier signal, thereby generating a transformed multi-carrier signal;

(b) defining a signal-to-be-corrected to be the transformed multi-carrier signal;

(c) generating a simulated output signal;

(d) estimating a signal maximum of the simulated output signal;

(e) deriving a first correction variable on the basis of the estimate;

(f) correcting the signal-to-be-corrected using at least the first correction variable, thereby generating a corrected output signal having a reduced crest factor;

(g) defining the corrected output signal to be the signal-to-be-corrected; and

(h) iteratively repeating steps (c) through (g) until the occurrence of a condition selected from the group consisting of causing the corrected output signal to have a crest factor below a predetermined threshold, and performing a predetermined number of iterations.

2. The method of claim **1**, wherein generating a simulated output signal comprises filtering the signal-to-be-corrected.

3. The method of claim **1**, further comprising temporarily storing the corrected output signal for use in a subsequent iteration step.

4. The method of claim **1**, wherein generating a simulated output signal comprises simulating an effect of a downstream filtering-and-interpolating system on the corrected output signal.

5. The method of claim **4**,

wherein correcting the signal-to-be-corrected comprises subtracting therefrom a correction signal formed by multiplying the first correction variable by a normalized impulse, thereby generating the corrected output signal;

6. The method of claim **5**, further comprising temporarily storing the corrected output signal.

7. The method of claim **4**, further comprising:

deriving a second correction variable from the estimate in the same iteration step in which the first correction variable is derived,

subtracting, from the signal-to-be-corrected, a value derived from the first and second correction variables, thereby generating the corrected output signal.

8 The method of claim 7, further comprising temporarily storing the corrected output signal.

9. The method of claim 1, further comprising reducing a bit width of the transformed multi-carrier signal.

10. The method of claim 4, wherein the simulated signal comprises a plurality of sample values and deriving the correction variable comprises using a subset of the sample values.

11. The method of claim 1, wherein deriving a correction variable comprises identifying a particular sample point at which the estimate occurs.

12. The method of claim 4, wherein simulating an effect of a filtering-and-interpolating system comprises convolving a shortened impulse response of a filter and a reduced impulse response of an interpolator with the signal-to-be-corrected.

13. The method of claim 12, further comprising:

selecting the shortened impulse response to be the first 20% of the sample values of the impulse response of the filter; and

selecting the reduced impulse response to be the central 60% of the sample values of the impulse response of the interpolator.

14. The method of claim 1, further comprising passing the corrected output signal through a D/A converter.

15. The method of claim **1**, wherein generating a simulating output signal comprises simulating a high-pass filter followed by a low-pass filter.

16. The method of claim **1**, wherein generating a simulated output signal comprises simulating fourth order IIR high pass filter and simulating an FIR interpolation filter.

17. The method of claim **1**,wherein the multi-carrier signal is selected from the group consisting of a DMT signal and an OFDM signal.